PRELIMINARY AMENDMENT

Amendments to the Claims

 This listing of claims will replace any prior versions or listings of claims in the application.

Listing of Claims

CLAIMS

1.(Original) An elastic fabric characterized by following matters.

 (i) an elastic yarn is applied to warp yarns or weft yarns.

 (ii) a breaking elongation of the elastic yarn is more the 60 %, and

a rate of an elastic recovery after 15 % elongation of the elastic yarn is more the 90 %.

 (iii) the elastic fabric has stress at 10% elongation of more than 150 N/5cm and less than 600 N/5cm in the direction where the elastic yarn is in continuous without cut inside of the elastic fabric.

 (iv) a rate of hysteresis loss ΔE which is calculated by the equation

$\Delta E= 100XC/V=100X(V-W)$ /V IS 20 ~45% $(20 \leqq \Delta E \leqq 40)$.

At this;

 (i) V is integral value which is calculated by integrating load-elongation equation $(f_0(\rho))$ from 0% to 10% elongation in the direction (X) where the elastic yarn is in continuous without cut inside of the elastic fabric, where load-elongation equation $(f_0(\rho))$ is defined by the loading curve (f_0) of the hysteresis in the load-elongation diagram.

 (ii) W is integral value which is calculated by integrating load-elongation equation $(f_0(\rho))$ from 10% to 0% elongation in the direction where the elastic yarn is in continuous without cut in the elastic fabric, where the load-elongation equation $(f_0(\rho))$ is defined by the load-reducing curve (f_1) of the hysteresis in the load-elongation diagram.

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(iii) C=V-W is value of hysteresis loss which is calculated as difference of values between integral values V and W.

2.(Original) An elastic fabric as set forth in claim 1, wherein:
A density of bulk (J=TxG; dtdx/cm) is set up more then 17000 dte x/cm.
At this, the density of bulk (J=TxG) is defined as a product value of the average fineness of an elastic yarn (T; detex/number) and the density of arrangement of the elastic yarn (G=M/L; number/cm) which is calculated by dividing numbers of elastic yarns (M; number) by regular intervals (L; cm) in the orthogonal direction cross at right angles to the prolonging direction where elastic yarns prolong.

3.(currently amended) An elastic fabric as set forth in ~~any one of~~ claims 1, wherein: stress at 10% elongation B ; N/ 5cm) in the 45 degrees bias direction where has inclination of 45 degrees to the prolonging direction where elastic yarns prolong, is more than 5% and less than 20% in comparison with 10% elongation stress (F; N/ 5cm) in the prolonging direction where elastic yarns prolong.

4.(currently amended) An elastic fabric as set forth in ~~any one of~~ claims 1, ~~2, 3,~~ wherein:
covering rate (K) is set up more than 30% (K = 100xMx D/L$\geq$ 30%).
At this, the covering rate (K) is defined by dividing product value (M x D) of average diameter of the elastic yarn (D ; cm), which is defined by square root of product value (S x k) of modulus of elasticity (k=4xπ^{-1}) and the areas (S ; cm^2) of the cross section of the elastic yarns which are disposed in the regular intervals (L ; cm) in the direction which crosses at right angles to the prolonging direction where the elastic yarns prolong, and numbers (M) of the elastic yarns which are disposed in the regular intervals (L;cm) by the regular intervals (L : cm).

5. (currently amended) An elastic fabric as set forth in ~~any one of~~ claims 1, ~~2, 3, 4~~ wherein:

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(i) the elastic fabric is woven by warp yarns and weft yarns,

(ii) any one of pointed twill weaves, entwining twill weaves, herring-bone twill weaves, skip draft twill weaves, and modified twill weaves, where the continuity direction of intersections draw zigzag lines or radial lines, or any one of mat weaves, matt weaves, basket weaves hopsack weaves, warp-weft weaves, irregular or fancy mat weaves, stitched mat weaves and other modified plain weaves, of which rate of the intersection (H = P/m) is less than 0.5, is applied to the elastic fabric.

At this, the rate of the intersection (H = P/m) is defined by dividing the numbers (P) of bending points in front and/or in rear of intersections in the complete textile design of the woven elastic fabric, where the elastic yarn and the intersecting yarn bend and change their dispositions from surface side to back side or from back side to surface side one another, by the numbers (m) of the intersecting yarns which consist the complete textile design,

6. (currently amended) An elastic fabric as set forth in ~~any one of~~ claims 1, ~~2, 3, 4, 5,~~ wherein:

(i) the elastic fabric is woven by warp yarns and weft yarns,

(ii) rate of the intersection (H=P/m), which is defined by dividing the number (p) of bending points in front and/or in rear of intersections in the complete textile design of the woven fabric, where the elastic yarn and the intersecting yarn bend and change their dispositions from surface side to back side or from back side to surface side one another, by the numbers (m) of the intersecting yarns which consist the complete textile design, is set up less than 0.5 (H=P/m$\leq$0.5), and

(iii) product value (HxK) of rate of an intersection (H) and covering rate (K) of the elastic yarn is set up more than 0.1 (HxK$\geq$0.1).

7. (currently amended) An elastic fabric as set forth in ~~any one of~~ claims 1, ~~2, 3, 4, 5, 6,~~ wherein:

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(i) the elastic fabric is woven by warp yarns and weft yarns,

(ii) density of bulk (J ; dtex/cm) of the elastic yarn is set up from (0.5 to 3.0 times of density of bulk (j;dtex/cm)of the intersecting yarn which crossing the elastic yarn at right angles $(0.5 \text{xj} \leq \text{J} \leq 3.0 \text{ xj})$.

At this, density of bulk (J;dtex/cm) of the elastic yarn is calculated as product value (TxK) of average fineness (T; dtex) and density of the arrangement (G= n/L ; number/cm) of the elastic yarn which is calculated by dividing the numbers of elastic yarns (n; number) with the regular intervals (L ;cm) in the orthogonal direction crossing at right angles to the direction in which the elastic yarns prolong, and bulk (j;dtex/cm) of the intersecting yarn, which is an inelastic yarn, is calculated as product value (txk) of average fineness (t;dtex) and density of the arrangement (g=m/L ; number/cm) of the intersecting yarn which is calculated by dividing the numbers of intersecting yarns (m;number) by the regular intervals (L;cm) in the prolonging direction where the elastic yarns prolong.

8. (currently amended) An elastic fabric as set forth in ~~any one of~~ claims 1, ~~2,~~ wherein:

(i) the elastic fabric is a weft knitted fabric knitted by an inelastic yarns and an elastic yarns,

(ii) the elastic yarn is continue in line in the knitting width direction (Γ) over at least plural wales of at least one of plural courses, and

(iii) stress at 10% elongation (F) of the weft knitted fabric in the knitting length direction is set up more than 25 N/5 cm.

9. (currently amended) An elastic fabric as set forth in ~~any one of~~ claim 8, wherein: average diameter of the elastic yarn is set up more than 1.5 times of average diameter of the inelastic yarn.

10. (currently amended) An elastic fabric as set forth in ~~any one of~~ claims 8, ~~9,~~ wherein:

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(i) at least two kinds of inelastic yarn of the first inelastic yarn (13a) and the second inelastic yarn applied to the weft knitted fabric (10), and the bace knitted fabric is formed from the first inelastic yarn,

(ii) the second inelastic yarn is knitted into the bace knitted fabric by appling float stitch knitting textile design and in a manner to form a needle loop together together with the first inelastic yarn at least in one of several courses every several needle loops, and

(iii) the sinker loop formed from the second inelastic yarn is extending in line in the knitting width direction over several wales from one needle loop formed together with the first inelastic yarn to another adjacent needle loop formed together with the first inelastic yarn.

11. (currently amended) An elastic fabric as set forth in ~~any one of~~ claims 1, ~~2, 3, 4, 5, 6, 7,~~ wherein:

(i) the elastic fabric is formed in three-dimensional constructions with a face fabric formed from face yarns and a back fabric formed from back yarns,

(ii) the elastic yarn is applied to at least as one kind of back yarns.

12. (currently amended) An elastic fabric as set forth in ~~any one of~~ claim 11, wherein: the face fabric and the back fabric are connected by the connecting yarns which are not applied for forming of both face fabric and back fabric.

13. (currently amended) An elastic fabric as set forth in ~~any one of~~ claim 12, wherein:

(i) the face fabric and the back fabric are connected by the connecting yarns which are not applied for forming of both face fabric and back fabric.

(ii) an interspace stratum which has a thickness of more than 0.3 mm is formed between the face fabric and the back fabric.

14. (currently amended) An elastic fabric as set forth in ~~any one of~~ claims 12, ~~13,~~ wherein:

(i) the face fabric and the back fabric are connected by the connecting yarns which are not applied for forming of both face fabric and back fabric.

(ii) the elastic yarn is applied to at least as one kind of back yarns, and

(iii) the face fabric is formed as a knitted net fabric which has openings having opening area of more than 1 mm^2.

15. (currently amended) An elastic fabric as set forth in ~~any one of~~ claim 14, wherein:
two kinds of chain stitch openings are formed by the face yarn alternately every several courses, each of the two kinds of chain stitch openings is formed over several courses, one of the two kinds of chain stitch openings is formed together with one of the face yarns and other face yarn which is adjacent left side of the one of the face yarns in the knitting width direction, and another one of the two kinds of chain stitch openings is formed together with the one of face yarns and another face yarn which is adjacent right side of the one of face yarns in the knitting width direction.

16. (currently amended) An elastic fabric as set forth in ~~any one of~~ claims 13, ~~14, 15,~~ wherein: the back fabric is formed with the ground stitch back yarn for forming the chain stitch opening row extending in the knitting length direction and the inserted back yarn which is applied for connecting adjacent chain stitch opening rows without forming needle loops.

17. (currently amended) An elastic fabric as set forth in ~~any one of~~ claims 13, ~~14, 15, 16,~~ wherein: the elastic yarn is applied for the connecting yarn.

18. (currently amended) An elastic fabric as set forth in ~~any one of~~ claims 1, ~~2, 3, 4, 5, 6, 7, 8 ,9, 10, 11, 12, 13, 14, 15, 16, 17,~~ wherein: the elastic yarn is thermally adhered to other yarns.

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19. (currently amended) An elastic fabric as set forth in ~~any one of~~ claims 1, ~~2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18,~~ wherein: the tensile stresses, which act in any one of yarns continuous direction and also act respectively at least 2 apart portions being apart in the other direction crossing at right angles to that one of yarns continuous direction and also act at regular rate of elongation of the elastic fabric, are designed in various.

20. (currently amended) An elastic fabric as set forth in ~~any one of~~ claims 1, ~~2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19,~~ wherein:

(i) two kinds of yarns are threaded in by directed to respectively different two directions which cross at right angles one another, and

(ii) the regular tensile strenghes, which act in the same direction where the yarn of the elastic fabric is in continuous in its length direction, are different between two portions, where are apart from one another in the direction, where any one of the two kinds of yarns is in continuous in it's length direction, and where any another one of the two kinds of yarns is in continuous across the one of the two kinds of yarns.

21. (currently amended) An elastic fabric as set forth in ~~any one of~~ claims 1, ~~2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20,~~ wherein:

(i) lower stretch yarn and high stretch yarn are applied to the elastic fabric, and

(ii) at the regular strengh different positions of the elastic fabric, specifications of the elastic fabric are designed even in connection with textile design and density of threading.

22. (currently amended) An elastic fabric as set forth in ~~any one of~~ claims 1, ~~2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21,~~ wherein:
the surface of the regular strengh different positions of the elastic fabric are covered with cut piles, loop piles or fluffs

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formed from the yarns which are even in connection with dyeing
property, fineness, number of twist, and meterial of fiber.

23. (currently amended) An elastic fabric as set forth in ~~any one of~~
claim~~s~~ 1, ~~2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17,
18, 19, 20, 21, 22,~~ wherein: average frictional modulus of
elasticity (ω) of the surface of the elastic fabric is designed
more than 0.26 ($0.26 \leq \omega$) by appling a non-slip yarn which has fine

fibers of a single fiber fineness less than 30 dtex to the elastic
fabric, and by floating out the fine fibers over the surface of the
elastic fabric in a manner of that the fine fibers float out or the
non-slip yarn exposes at least among rectangular area of 1 cm^2
(lengthwise 1cm x crosswise 1cm).
At this, average frictional modulus of elasticity (ω) of the surface
of the elastic fabric is calcurated through following steps.
(Step i)
A rectangular test fabric taken out from the elastic fabric, size
lengthwise 20cmx crosswise 20 cm, is spreaded over and fixed on the
surface of the metal plate which is finish in mirror plane and
supported horizontally.
(Step ii)
A stainless rectangular contact segment having 20 lines of cut
channel of width 0.1 mm and depth 0.1 mm over the undersurface, size
lengthwise 10mm x crosswise 10 mm, is put on the test fabric.
(Step iii)
Load of 50 gf is set on the test fabric through the contact segment.
(Step iv)
The contact segment is moved at speed of 0.1 mm/second to and from
30mm in the right angled direction of the cut channel.
(Step v)
Frictional modulus of elasticity (ω_1) in the longitudinal direction
of the elastic fabric is calculated by dividing average value of
frictional force (F_1 ; gf) between the contact segment and the test
fabric by load 50 gf.

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Frictional modulus of elasticity (ω_2) in the lateral direction of the elastic fabric is calculated by dividing average value of frictional force (F_2 ; gf) between the contact segment and the test fabric by the load (50 gf).

Average frictional modulus of elasticity (ω) of the surface of the elastic fabric is calculated as average ($0.5\omega_1 + 0.5\omega_2$) of frictional modulus of elasticity (ω_1) in the longitudinal direction and frictional modulus of elasticity (ω_2) in the lateral direction.

24. (currently amended) An elastic fabric as set forth in ~~any one of~~ claim 23, wherein:
the elastic fabric is finished by raising its surface to nap the surface of the non-slip yarn exposed thereon.

25. (currently amended) An elastic fabric as set forth in ~~any one of~~ claim 23, wherein:
the surface of the elastic fabric is covered with piles formed ~~fron~~ from the non-slip yarn.

26. (currently amended) An elastic fabric as set forth in ~~any one of~~ claim 23, wherein: cord yarn, which has napped surface formed by cutting natural leather, synthetic leather, artificial leather, or non-woven fabric and has a fine fiber of fineness less than 30 dtex, is used for the non-slip yarn.

27. (currently amended) an elastic fabric as set forth in ~~any one of~~ claim 23, wherein:
any one of following yarns is used for the non-slip yarn:
    (i) spun yarn and napped multifilament yarn having float fluffs,
    (ii) ring yarn having ring like bumpy surface formed by annex yarns climb up a core yarn,
    (iii) slub yarn having slub like bumpy surface formed by annex yarns climb up a core yarn,

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(iv) nep yarn having nep like bumpy surface formed by annex yarns climb up a core yarn,

(v) seath core conjugate yarn having bumpy surface formed by covering core yarn by seath yarn, and

(vi) interlace yarn having bumpy surface formed by over feeding multifilament.

28. (currently amended) An elastic fabric as set forth in ~~any one of~~ claim 23, wherein: chenille yarn formed by fixing decorative yarn to core yarn is used for the non-slip yarn.

29. (currently amended) An elastic fabric as set forth in ~~any one of~~ claim 23, wherein: flocky yarn formed by electrostatically fixing fiber fragment to core yarn is used for the non-slip yarn.

30. (currently amended) An ~~elastic top material characterized by the following matters.~~ ~~an~~ elastic fabric as set forth in ~~any one of~~ claims 1, ~~2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28,~~ is hanged between frame parts which are projected at both sides of a frame, are apart one another, and are in opposite to one another, and is fixed both edges of the elastic fabric to the frame parts.